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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,458

12/23/2003

Tsuyoshi Kubota

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11/09/2006

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EXAMINER

KIM, CHONG HWA

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 11/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/743,458	Applicant(s) KUBOTA ET AL.	
	Examiner Chong H. Kim	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 25-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5/3/04; 6/14/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Invention I, Claims 1-24, in the reply filed on Oct 6, 2006 is acknowledged.

2. Claims 25-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on Oct 6, 2006.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the valley being formed at a position opposite to the bearing locking groove provided on the inner circumferential surface of the crank-pin hole as recited in claim 4; the engine as recited in claim 23; and the vehicle as recited in claim 24 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

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be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-24 use the language "type". The MPEP 2173.05(b) states that the addition of the word "type" to an otherwise definite expression extends the scope of the expression so as to render it indefinite. Also, claim 7 includes the language in the body of the claim. Ex parte Copenhaver, 109 USPQ 118 (Bd. App. 1955).

Claim 4 recites the limitation wherein the valley is formed at a position opposite to the bearing locking groove in lines 4-5. It is indefinite because it is not clear exactly where the valley should be located in respect to the location of the bearing locking groove.

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Claim 8 recite the limitation “the fracture starting point groove are” in line 4. It is indefinite because the subject/verb agreement does not match.

Claim 10 recites the limitation, “a pair of the fracture starting point grooves” in line 2. It is indefinite because claim 1, in which claim 10 depends therefrom, recites that there is one fracture starting point groove. It is not clear exactly how many fracture starting point grooves there are.

Claims 11 and 13 recites the limitations regarding the angles being 45 degrees and 0 degrees, respectively. The limitations are indefinite for failing to set the relative points or surfaces in respect to the predetermined fracture plane so that the angle can be properly measured.

Claims 13 and 21 recite the limitation wherein the angle is 0 degree. It is indefinite because it is not clear how one of ordinary skill in the art can make the angular measurement on two surfaces/planes that do not meet.

Claims 19 and 20 recite the limitation “an upper corner thereof”. It is indefinite because it is not clear what is considered “an upper corner” of the valley.

Claim 21 recites the limitation wherein the fracture starting point groove includes parallel walls in lines 2-3. Furthermore, claim 21 recites the limitation wherein a substantially parallel groove that forms an arc shape is included. It is indefinite because it is not clear what the parallel groove is. It is understood that the connecting rod includes a valley and a fracture starting point groove. However, having the extra parallel groove included in the connecting rod makes it confusing.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 2, 7-12, 14, 15, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Mukai et al., U.S. Patent 4,693,139.

Mukai et al. shows, in Figs. 1-6, an engine having a split type connecting rod, the connecting rod comprising: a crank-pin hole (see Fig. 1); a valley 11, 12 formed on an inner circumferential surface 7 of the crank-pin hole; a fracture starting point groove (see Fig. 6 at the left most portion of the valley) formed at the base portion of the valley; wherein a width of the fracture starting point groove is less than a width of the valley (see Fig. 6); wherein the split type connecting rod is a nut-less type of connecting rod that is made of a forged material (col. 3, line 8); further comprising a small end portion 1 and a large end portion 2, wherein the large end portion includes the valley and the fracture starting point groove is formed in the large end portion; further comprising a rod portion 3 and a cap portion 2 sub 2; wherein a pair of the fracture starting point grooves are formed on the inner circumferential surface of the crank-pin hole; wherein an angle relative to a predetermined fracture plane passing from a shaft center of the crank-pin hole through a bottom portion in a bottom surface of the pair of fracture starting point groove is approximately 45 degrees (see Fig. 6 and col. 3, lines 36-47); wherein an interior angle of the valley is approximately 90 degrees (see Fig. 6 and col. 3, lines 36-47); wherein a

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cross section of the valley is larger than a cross section of the fracture starting point groove (see Fig. 6); and wherein the valley includes a pair of sloped portions 11, 12.

8. Claims 1, 9, 10, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (AAPA).

AAPA shows, in Figs. 1A and 1B, an engine having a split type connecting rod, the connecting rod comprising: a crank-pin hole 50a; a valley 51 formed on an inner circumferential surface of the crank-pin hole; a fracture starting point groove formed at the base portion of the valley; further comprising a rod portion and a cap portion; wherein a pair of the fracture starting point grooves are formed on the inner circumferential surface of the crank-pin hole; wherein upper and lower inner surfaces of the fracture starting point grooves are formed such that an angle relative to a predetermined fracture plane passing from a shaft center of the crank-pin hole through a bottom portion in a bottom surface of the pair of fracture starting point grooves is about 0 degrees.

9. Claims 1-3, 7-10, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Spurny, U.S. Patent 6,125,536.

Spurny shows, in Figs. 1-5, a split type connecting rod comprising: a crank-pin hole 9; a valley 13 formed on an inner circumferential surface of the crank-pin hole; a fracture starting point groove (the rounded end portion of the valley) formed at the base portion of the valley; wherein a width of the fracture starting point groove is less than a width of the valley; wherein the valley is formed such that the base portion is located at a position (the most left or right

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portion of the valley 13 as shown in Fig. 2) where a ratio of a depth of the fracture starting point groove to a shortest distance from an opening of the fracture starting point groove to a bolt hole 11 (as measured at the mid-portion of the valley 13 in fig. 2) is about 70% or more; wherein the split type connecting rod is a nut-less type of connecting rod that is made of a case material (see Abstract); further comprising a small end portion 1 and a large end portion 5, wherein the large end portion includes the valley and the fracture starting point groove is formed in the large end portion; further comprising a rod portion 3 and a cap portion; wherein a pair of the fracture starting point grooves are formed on the inner circumferential surface of the crank-pin hole; wherein a cross section of the valley is larger than a cross section of the fracture starting point groove; and wherein the valley includes a pair of sloped portions.

10. Claims 1, 2, 4-10, 14-20, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishida et al., U.S. Patent 6,312,159 B1.

Ishida et al. shows, in Figs. 1, 2, and 7, an engine (col. 1, line 17) having a split type connecting rod, the connecting rod comprising: a crank-pin hole 1d; a valley 21 formed on an inner circumferential surface of the crank-pin hole; a fracture starting point groove formed at the base portion of the valley; wherein a width of the fracture starting point groove is less than a width of the valley; further comprising a bearing locking groove 5a, 5b, 6a, 6b provided on the inner circumferential surface of the crank-pin hole, wherein the valley is formed at a position opposite to the bearing locking groove provided on the inner circumferential surface of the crank-pin hole (one valley 21 being on the opposite to the bearing locking groove 6a, 6b); wherein the bearing locking groove includes a pair of concave portions located at positions that

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are deviated in the circumferential direction of the inner circumferential surface of the crank-pin hole; wherein a width of the valley in the circumferential direction of the inner circumferential surface is less than a width of the pair of concave portions of the bearing locking groove in the circumferential direction of the inner circumferential surface (Fig. 7); wherein the split type connecting rod is a nut-less type of connecting rod that is made of a cast material (die-formed); further comprising a small end portion 1b and a large end portion 1a, wherein the large end portion includes the valley and the fracture starting point groove is formed in the large end portion; further comprising a rod portion 1c and a cap portion 3; wherein a pair of the fracture starting point grooves are formed on the inner circumferential surface of the crank-pin hole; wherein a cross section of the valley is larger than a cross section of the fracture starting point groove (see Fig. 7); and wherein the valley includes a pair of sloped portions 5a, 5b, 6a, 6b; wherein the sloped portions define chamfers for guiding a bi-partitioned bearing metal element 10 that is inserted into the crank-pin-hole; wherein the sloped portions have curved shapes, or swelled, rounded shapes; and wherein the valley has a concave shape, or a rectilinear shape 5a, 5b, 6a, 6b in an upper corner thereof.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mukai et al., Spurny, or Ishida et al.

Mukai et al., Spurny, or Ishida et al. disclose the split type connecting rod, but fails to show a vehicle. It would have been obvious to apply the connecting rod as disclosed by Mukai et al., Spurny, and Ishida et al. in an engine for a vehicle since the Examiner takes Official Notice of the fact that providing such connecting rod in a vehicle is well known in the art of automotive and would be within the level of ordinary skill in the art.

Double Patenting

13. Claims 1, 2, 4, 5, 7-10, 14-20, 23, and 24 are directed to an invention not patentably distinct from claims 1-22 of commonly assigned US Patent Application No. 10/743,457. Specifically, claims 1-22 of 10/743,457 recite the same subject matters such as, but not limited to, the split type connecting rod comprising the pair of valleys, the pair of fracture starting point groove, the bearing locking grooves, and the bearing element guided by chamfers or sloped portions.

14. The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned US Patent Application No. 10/743,457, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c),

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either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

15. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

16. Claims 1, 2, 4, 5, 7-10, 14-20, 23, and 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending Application No. 10/743,457. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-22 of copending Application No. 10/743,457 recite the same subject matters such as, but not limited to, the split type connecting

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rod comprising the pair of valleys, the pair of fracture starting point groove, the bearing locking grooves, and the bearing element guided by chamfers or sloped portions.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Connecting rod with bearing elements and sloped portions.

Iida et al., U.S. Pub No. 2002/0148434 A1

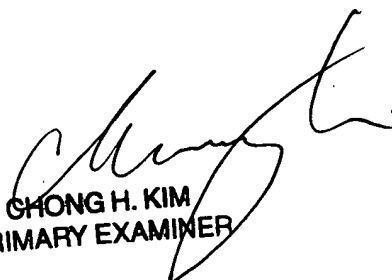
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chong H. Kim whose telephone number is (571) 272-7108. The examiner can normally be reached on Monday - Friday; 6:00 - 2:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on (571) 272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

chk
November 7, 2006


CHONG H. KIM
PRIMARY EXAMINER